

ORGANIZATIONAL AND PROCESS INNOVATIONS IN INTERNATIONAL LOGISTICS COMPANIES: THE RELEVANCE AND EXPECTED BENEFITS

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ABSTRACT

This article identifies relevance of Organizational and Process innovations in International logistic companies and explains the main benefits that could have been expected through implementation of Organizational and / or Process innovation concept. Article presents the main Organizational and Process innovations approaches and innovation context in logistics technologies, defines the proposed Organizational innovation on Logistics applicable management system solution and explains the Process innovations trends of Logistics development through Smart Specialization priorities.

KEYWORDS: *organizational, process innovations, logistics, smart specialization.*

JEL CODES: L92, M16, O31, O32, R42

Introduction

Innovation is regarded as a crucial factor for survival and competitive strength of organizations. For industrial companies innovations of the product system and particularly innovations of the processes generating these products are essential. Various types of innovations can be differentiated: social, organizational, administrative or technical, incremental or fundamental, product or process. In any organization a large number of objects of the innovation process can be named. In recent times, the role of logistic services has radically changed according to globalization demands and the emerging market conditions. In a setting of increasing logistics complexity, organizations can face their competitors also providing advanced services designed for a more competitive and environmental-friendly supply-chain management.

In this article special interest is drawn to the innovations of international logistic companies. Innovation is regarded as a crucial factor for the survival and the competitive strength of any logistic firm. Logistic firms have to adapt to increasing global competition and dynamics. This results in a large number of innovative products, processes and services developed by the companies. The part of new products in the companies' product portfolio increased in the last years. For those firms the development of new products and services is the engine of growth (Pisano, 1997).

Problem of this research – how to identify relevance of organizational and process innovations in logistic companies and what could be the main benefits expected if go in-line with implementation of Organizational and/or Process innovation concept.

This paper purpose is to examine Organizational and Process innovations of International logistic companies.

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Chosen object in this paper – Organizational and Process innovations in International logistic companies. International logistic company as subject is considered to be able to meet most of global challenges and as structural component participates in several logistic value chain options, thus suggests that the analysis of the selected object is competitive and can be compared to the full participation of logistics services chain.

The main tasks of this paper are: to provide the theoretical background of Organizational and Process innovations, to distinguish Innovation contest importance in Logistics technologies, to summarize most common Organizational and Process innovations approaches in logistics sector, to define proposed Logistics applicable management system solution and to investigate the priority of Logistics development through Smart Specialization priorities.

Methods of research. The following methods have been applied in order to achieve the purpose of the scientific research presented in this Paper: systemic and comparative analysis and synthesis of scientific literature as well as strategic documents and legislation.

The literature about persistence in innovation has also identified differentiated patterns when different types of innovation activities (new products, processes, organization methods) are considered.

1. The theoretical background of Organizational and Process innovations

Innovation strategies have been thought to differ greatly across firms. Firms can pursue technological innovation in product, process or both dimensions. Although, several definitions for product and process innovation are available in the literature, the most agreed are in line with the Oslo Manual. According to the Oslo Manual, product innovation relates with a new or significant improvement in a product (or service), whereas process innovation is defined as the introduction of new or significantly improved production method or delivery system OECD (2005).

As it is explained in Community framework for state aid for research and development and innovation (2006), Organizational innovation means the implementation of a new organizational method in the undertaking's business practices, workplace organization or external relations. Changes in business practices, workplace organization or external relations that are based on organizational methods already in use in the undertaking, changes in management strategy, mergers and acquisitions, ceasing to use a process, simple capital replacement or extension, changes resulting purely from changes in factor prices, customization, regular seasonal and other cyclical changes, trading of new or significantly improved products are not considered innovations.

Despite the exceptional importance of organizational innovations, the theoretical proof is quite problematic. There is no agreed theory in the area. The existing literature on organizational innovation is diverse and scattered. Armbruster et al. (2008, p. 645) underlines, that “there is no consensus on a definition of the term ‘organizational innovation’, which remains ambiguous”.

According to Lam (2011) there are three main approaches to organizational innovation: The first stream of organizational theories focus on the structure of innovative organizations and its effects on product and process innovations (Lawrence-Lorsch, 1967; Mintzberg, 1979). The second approach underlines the importance of organizational life long learning (Argyris-Schön, 1978; Prahalad-Hamel, 1990; Senge, 1990; Nonaka von Krogh, 2009). The third part builds up models of organizational change and try to explain how organizations change (Thompson, 1967; Hannan-Freeman, 1984; Burnes, 1992; Kotter-Schlesinger, 2008).

The organizational innovations realized in practice can be classified in several ways. Armbruster et al (2008) highlights two significant points when grouping organizational innovations:

1. Do innovations take place inside the organizations or in the inter-organizational field?
2. Do innovations in question affect the organizational structure itself or they only change the processes taking places inside a given structure?

Types and focus, related to the above issues of organizational innovations, are presented in Figure 1.

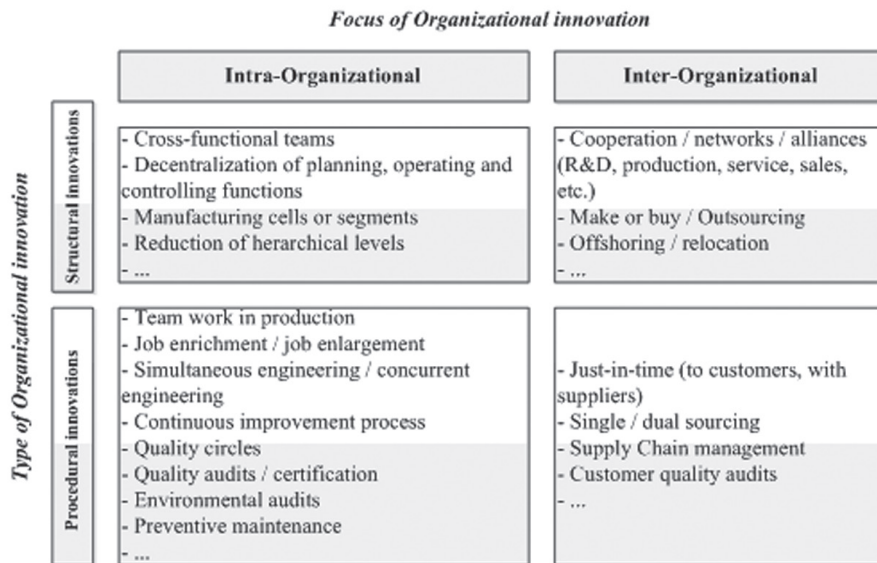


Figure 1. Types and focus of organizational innovations.

Source: Armbruster et al., 2008: 647

It is commonly agreed that Organizational innovations are instances of organizational change that:

- result from a shift in underlying organizational assumptions;
- are discontinuous from previous practice;
- provide new pathways to creating public value.

Lam (2006) also looks at Organizational innovation from the micro-level perspective of learning and organizational knowledge creation. He argues that organizations with different structural forms vary in their patterns of learning and knowledge creation, engendering different types of innovative capabilities. It then turns to the discussion of organizational adaptation and change, focusing on whether and how organizations can overcome inertia in the face of discontinuous technological changes and radical shifts in environmental conditions.

If compare to Organizational innovation, Process innovation mostly is defined in the way that it is the application or introduction of a new technology or method for doing something that helps an organization remain competitive and meet customer demands.

Community framework for state aid for research and development and innovation (2006) gives an abbreviation that “Process innovation means the implementation of a new or significantly improved production or delivery method (including significant changes in techniques, equipment and/or software). Minor changes or improvements, an increase in production or service capabilities through the addition of manufacturing or logistical systems which are very similar to those already in use, ceasing to use a process, simple capital replacement or extension, changes resulting purely from changes in factor prices, customization, regular seasonal and other cyclical changes, trading of new or significantly improved products are not considered innovations”.

Process innovation usually happens when an organization solves an existing problem or performs an existing business process in a radically different way that generates something highly beneficial to those who perform the process, those who rely on the process or both. For example, the introduction of a completely new sequence to an existing production process that speeds production by 100 %, thereby saving the organization money and time, could be considered a process innovation. Organizations today often bring in new information technology systems or find ways to use older in new ways at the forefront of their process innovation efforts.

Summarizing, Process Innovation can be defined as finding a novel way of achieving an output which was traditionally done in a different way. In the process innovation, the final product is not touched, but the method of bringing out the product is improved. The improvement could be due to use of new techniques, equipment, etc.

While the management of Product innovation has received considerable theoretical and empirical attention in the literature, our knowledge about how firms become Process innovators and why many firms fail to do so remains underdeveloped. More specifically, most of studies aim to shed light on the antecedents, contingencies, and performance consequences of interfirm differences in process innovation success, that is, firms' propensity and effectiveness of implementing new production, supply chain, or administrative processes (Pienind, Salge, 2015).

Process innovation can and should happen at various levels within the organization as no organization can depend solely upon innovation occurring at one level only. Successful organizations have an innovation process working its way through all levels of the organization (Figure 2).

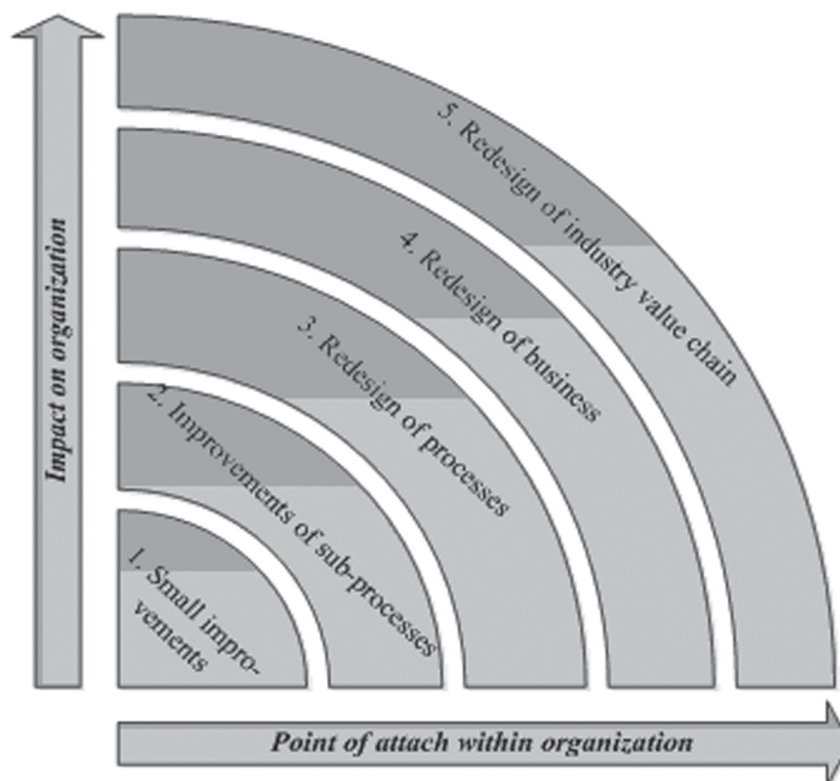


Figure 2. Levels of Process innovations

Source: Jeston, Nelis, 2006: 2

Likewise, research demonstrates that firms engaging only in Process innovation have a lower performance than firms conducting simultaneously Organizational, Product and Process innovation (e.g., Capon et al., 1992). And yet a clear distinction between these types of organization innovations in practice is very difficult to identify, because the realization of innovative solutions, especially Organizational and Process ones, are interrelated.

2. Innovation contest in logistic technologies

Innovation contests aim at integrating innovative users and their expertise into the innovation process (Füller, Hutter, Hautz, 2013: 241). They can be defined as IT-based and time-limited competitions arranged

by an organization or individual calling on the general public or a specific target group to make use of their expertise, skills or creativity in order to submit a solution for a particular task (See, Kalogerakis, 2015).

As markets demand a higher supply speed and more flexibility, logistic represents an important source of competitive advantage for the companies along the stages of manufacturing, warehousing, procurement and distribution (Chapman et al., 2002).

Innovation contest in particular field can be identified by using SWOT methodology, which in this case helps to summarize international logistic companies competitiveness elements.

By using SWOT analysis methodology, Table 1 presents descriptive analysis of International logistic companies, performing in Lithuania market.

Table 1. SWOT analysis of international logistic companies, performing in Lithuania market

SWOT segment	Descriptive analysis
Strengths	<p><i>Comparing with the old EU member countries carriers:</i></p> <ol style="list-style-type: none"> 1. Cheaper labor force 2. Better understanding of East market specifics 3. Eastern European countries' languages usage and drivers' acceptance for transporting goods over longer routes <p><i>Comparing with the third-countries carriers:</i></p> <ol style="list-style-type: none"> 1. Auto parks novelty and reliability, developed warehousing network 2. The use of a single EU financial system (VAT refund from EU countries, a single currency) 3. Free-border 4. Market opening and the transition to a system without the authorization to single EU market
Weaknesses	<p><i>Comparing with the old EU member countries carriers:</i></p> <ol style="list-style-type: none"> 1. Low productivity and not optimized transportation technologies 2. Lack of Modern management, financial, economic, marketing and logistics knowledge 3. Low utilization of IT and data acquisition technologies in enterprises level 4. The lack of most EU languages <p><i>Compared with the third-countries carriers:</i></p> <ol style="list-style-type: none"> 1. The higher costs due to higher fuel prices 2. More expensive labor force
Opportunities	<ul style="list-style-type: none"> • 1. Smart transport systems, information and communication technologies • 2. Technologies/models for the management of international transport corridors and integration of modes of transport • 3. Advanced electronic contents, content development technologies and information interoperability • 4. Information and communications technology infrastructure, cloud computing solutions and services
Threats	<ol style="list-style-type: none"> 1. Large current EU member states of carriers, competition for higher productivity 2. Direct Latvian, Polish and Russian carriers competition 3. Increasing excise, road fees 4. Possible EU and national governments unfavorable decisions 5. Skilled labor migration 6. Low investment in intellectual capital ratio compared with the old EU members Member States carriers 7. Low investment to warehouse, information and transportation technologies may reduce international logistic market share.

As SWOT analysis results show, much of areas are requiring investments into Organizational and Process innovations for sustain in growing global competitive environment, and thus perform companies to compete in lower position if compare to Middle and West part of EU.

Chapman et al. (2002) argues that the innovation in logistics services could take place through technology that facilitates the data processing and exchange as well as the better manipulation and transportation of

products; through knowledge by creating, sharing and using strategic knowledge from internal or external sources to improve the efficiency. Through relationship networks that demand collaborative work implementing new supply chain concepts could promote more integrated business processes along companies of a cluster and learning of best practices. In this last point Dilk et al. (2008) mentioned out that the merely formation of networks will not lead to a competitive advantages for the companies if they are not engage to research, develop and disperse innovations resulting of the creative long-term bonding between companies, clients and suppliers.

Technology has traditionally been viewed as the key to productivity in manufacturing; however, technology has assumed greater significance in services recently (Bitner et al., 2000; Howells and Tether, 2004). Technology enables service firms to improve service efficiency and effectiveness. Based on the above discussion about innovation, scientists (Lin, Ho, 2007) summarize that innovation is a process of turning opportunity into new ideas and of putting these into widely used practice. According to the logistics activities, technological innovations, that mostly influence the innovation contest, in the logistics industry can be classified into four categories:

(1) Data acquisition technologies: Data collection and exchange are critical for logistics information management and control. Good quality in data acquisition can help logistics service providers deliver customers' goods more accurately and efficiently. The bar code system and radio frequency identification system (RFID) are acquisition technologies that can facilitate logistics data collection and exchange.

(2) Information technologies: Many logistics managers see the information technology as a major source of improved productivity and competitiveness. Information technologies may increase organizational productivity, flexibility and competitiveness as well as stimulate the development of inter-organizational networks. The information technologies that are commonly used in logistics industry include electronic data interchange (EDI), the Internet, value added network (VAN), point of sales (POS), electronic ordering system (EOS), logistics information system, computer telephony integration, and enterprise information portals.

(3) Warehousing technologies: Warehousing plays an important role in a logistical system. The design of a warehouse management system should address physical facility characteristics and product movement. The warehousing technologies that are commonly used in logistics industry include automated storage and retrieval system (AS/RS), automatic sorting system, computer-aided picking system, and thermostat warehouse. The automated storage and retrieval system is a mean to high density, hands free buffering of materials in distribution and manufacturing environments and can offer a quick and efficient way to search and move storages from a warehouse.

(4) Transportation technologies: The major objective of a transportation management system is to move product from an origin location to a prescribed destination while minimizing costs and damage expenses. The movement, at the same time, must take place in a manner that meets customer demands regarding delivery performance and shipment information availability. The transportation technologies that are commonly used in logistics industry include transportation information system, global positioning system (GPS), geographical information system (GIS), radio-frequency communication system, and transportation data recorder.

The challenge is to safeguard and to increase the competitive edge of the logistics sector because the sector's performance is directly linked to productivity in other economic sectors. It is estimated that 10 to 30 % improvement in efficiency could result in annual savings of EUR 100 to 300 billion for the European industry (EC, 2013a; 2013b). Advances in technology are needed to integrate freight transport modes more efficiently and to overcome the complexity of multimodal supply chains, which is considered to be a major barrier compared to the single-mode, door-to-door road delivery (EC, 2006; 2011). The challenge is to use all transport modes, where appropriate, to achieve optimum and sustainable use of resources.

3. Organizational and process innovations approaches in Logistic sector

Logistic sector's prevailing progress is concentrated on the innovative management approach – companies to systematically implement and increase the use of new management process, which aims to improve

the company's business and which is recognized internationally. For example: BSC (The balanced scorecard), JIT (Just-In-Time), TQM (Total Quality Management), LEAN, Six Sigma, TOC (Theory of Constraints) and others. Generally, the Innovative management method is considered to be recognized at the international level, if satisfied at least one of the conditions: a) describe / quoted in international publications; b) applied / is used by organizations in different countries; c) certified or accredited, or d) based on a specific internationally recognized methodology.

The balanced scorecard (BSC) is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals.

JIT (Just-In-Time) – production system, which is based on the manufacturing process flexibility (the possibility of producing a single line many car models in small quantities), and the absolute elimination of loss.

Total quality management (TQM) can be summarized as a management system for a customer-focused organization that involves all employees in continual improvement. It uses strategy, data, and effective communications to integrate the quality discipline into the culture and activities of the organization. Many of these concepts are present in modern Quality Management Systems, the successor to TQM. Here are the 8 principles of total quality management: customer focused, total employee involvement, process centered, integrated system, strategic and systematic approach, continual improvement, fact-based decision making, communications.

LEAN mostly is applicable for machinery industry. The core idea is to maximize customer value while minimizing waste. Simply, lean means creating more value for customers with fewer resources. It is a systematic way is to optimize processes, which is based on the principle that any work is done by the value of on-going task steps, called the process “spam”. Lean System is rated these processes ‘junk’ types: Repair / modification, Production Surplus, Unnecessary work, Unnecessary objects movement, Unnecessary movement of people and equipment, Unnecessary inventory, Waiting / Downtime.

“6 Sigma” – a statistical method based on mathematical processes work / work quality improvement methodology. “6 Sigma” goal – to improve the company's profitability by reducing the parameters related to the profit unwanted fluctuations (i.e. Deviations from the optimal values). The basic idea - reducing material, quality or profitability of process-related, adverse fluctuations in the parameters.

TOC (Theory of Constraints) – is logistic management philosophy, describing how to manage the targeted systems in humans, using the principles of science and the development of common sense solutions.

Innovative Management Systems mostly serve for organization innovations target – internationally recognized elements of their interaction, communication and practice proven methods system, which aims to ensure the smooth functioning of business processes by standardizing these processes. For example: ISO 9001 Quality Management System, OHSAS 18001 Occupational Health and Safety Management System, ISO 22000, ISO / IEC 27001 Group Management System, HACCP, BRC, IFS, JCI, SA 8000, TAPA FSR and others.

4. Logistics applicable management system solution

The evaluation and analysis of the Organizational innovative logistics system can inspire to create a model that would help the company's managers to realize the Organizational innovation for strategic decisions about new product management, purchasing, production, product distribution and sales effectiveness, and to ensure efficient customer service.

When comparing to existing and available in the market the optimal choices between the market products for organizational and processes improvement in international logistic organization, article author offers to combine most of suitable organizational and process functions and to modify them on the company choice, profile, size, specific, market share, profitability, employment also expectations and as result to have personalized Logistics applicable management system.

This Logistics applicable management system fits to most of Organizational and Process innovations definition and could cover these logistic organizational and process issues: (1) Warehouse Management System – all manages, warehouse processes and operations in real time, control the warehouse staff and used equipment. Effective solution is characterized by a high return on investment, quality and ergonomics. (2) Order collection system – assembly with IT, voice collection, assembly P2L system, continuous collection, road picking trolley. (3) Order sorting systems: Scan2Sort – is a high-precision manual order sorting system that do not use the printed instructions, but offering all the advantages of automated systems, such as the contents of the boxes, sorting waves, etc., etc. Screen2Sort – it orders the manual sorting system, where information is the staff computer screens. Put2Light – accurate and efficient manual sorting system. Employee oriented by light goods laying in places where the ordered goods are to be placed. Touch2Sort – Scan2sort system combines flexibility and ergonomics Screen2sort system. These orders manually sorting system, the information the employee by the radio terminal or a touch-screen display. One Touch2sort system can be used for an unlimited collection zones and places. (4) Warehouse program – μ Vision – warehouse operations for recording and tracing action program. The system is designed for small and medium-sized firms that are looking for ways to improve your warehouse operations and management and the relationship with your customers. Warehouse program μ Vision uses barcode technology and is easily integrated with the company already operating in IT systems, thus ensuring a common IT system integrity. (5) Decisions (cross-dock) process – this is the allocation process, when goods must not be placed into storage or storage areas, and immediately prepared for outgoing consignments to customers or to other warehouses. (6) Internet access (Web Access) module – provides an opportunity from any location in real-time to review these warehouse management system data: inventory balances, receiving orders and incoming goods, dispatch orders and dispatch goods, transport orders and ramps reservations and product cards nomenclature. All data is updated in real time. Access is permitted only for authorized (approved) users. Each user has a separate user name and unique password. Each user rights granted and visible data depends on the system configuration.

(7) Yard management – enables real-time visibility, and effectively control the arrivals of vehicles and their drivers in the movement, transport order processing progress.

While the new logistics system designing or optimizing the existing one, it is advisable to assess the following factors: 1. Affected business function (beyond logistical limits). 2. Does the definition of the ultimate goals are not conflicting. 3. Logistic system influence on other processes in the company. 4. Analysis of the logistic systems problems.

During the optimization of the logistics system is very important to evaluate the individual components of the system and to carry out a comprehensive analysis of the logistics system capacity, transportation costs, product profitability, by industry standards and comparative analysis.

Changing the parameters in the model, produced different situations, and which allows identifying and adopting the most optimal solution. Developing and optimizing the warehouse layout model is to identify product flows and to assess and calculate the possible options before deciding to implement any physical changes. It is very important to correctly assess the existing flow of goods, warehouse throughput rates and interfaces with the existing storage facilities (storage system selection and placement, use of peak year, day, month, year indicators, etc.). Simulation – a modern tool to monitor, modify, simulate and assess the situation and thus find the best solution.

5. Development of transport, logistics, information and communication technologies trough Smart Specialization priorities

The purpose of Smart Specialization is to transform the Lithuanian economy and increase its competitiveness by concentrating resources on selected priorities (Foray et al., 2012). Based on the information provided by IIET, on 14 October 2013, the Government of the Republic of Lithuania approved the six priority areas: 1. Energy and sustainable environment 2. Health technologies and biotechnologies 3. Agro-innovations and food technologies 4. New production processes, materials and technologies 5. Transport, logistics and ICT

6. Inclusive and creative society. The representatives of research, businesses, non-governmental sector and the Government who worked in six expert teams have proposed these priorities.

The priority field has been defined by the working group as a response to the global and national challenges and the opportunities that Lithuania's research and development and innovation (RDI) system can make the most of. Such definition aims to link the challenges with the current research potential and the businesses' capacities to create and apply innovations.

The objective of the International Group of Independent Experts (IGIE) was to formulate proposals for potential priority fields of smart specialization in Lithuania upon assessment of the country's economic and research potential and the expected key future challenges and upon consultation with representatives of Lithuanian industries and research institutions and policy decision-makers.

In formulating its proposals for the priority fields and in assessing the present and future potential and opportunities, the group of experts has used the following assumptions: there is a great potential, based on capitalization of knowledge, for increasing the Lithuanian enterprises' share of global markets or becoming established in the markets where they can be competitive. Also there is a great potential of RDI in both public and private sectors, which is necessary for and will probably be used in the implementation of the priority field. The priority field constitutes an appropriate response to the long-term national, EU or global challenges and opportunities.

Based on the analyses made and the results of discussions with stakeholders, six priority fields and sub-fields were identified by the group of experts as the ones where a breakthrough can be expected through the implementation of joint research and business projects. The sub-fields should be elaborated further in the future stages of the development of the Strategy for Smart Specialization as explained below, by identifying specific priorities such as critical technologies, processes or products.

Development of Process innovations in transport, logistics and e-systems over the next 20 years will be determined by the following factors: growing passenger and goods carriage flows and the cargo handling volumes; increasing concentration of people in cities, resulting in uneven loading of road infrastructure and increasing traffic jams; increasing pollution of the environment and the greenhouse effect; stronger competition because of third countries which lowers prices. Therefore, in order to remain competitive, innovation in transport and logistics are important. Consumer expectations for the quality of service and a safer, environmentally friendly and faster transportation are constantly growing.

Priorities in the area of transport, logistics, information and communication technologies cover two priority axis: 1. Smart transport systems and ICT, and 2. Technologies/models for the international transport corridors' management and integration of modes of transport.

Priority "Smart transport systems and ICT" includes: integrated transport management, electronic route planning for various modes of transport; electronic road toll system, electronic payment and ticketing systems; integrated real-time information to traffic participants (including information on transport flows and times); driver (and vehicle) recognition, monitoring of drivers' behavior and disciplinary measures; technologies enabling the interaction between vehicles and infrastructure (driver – vehicle – infrastructure); autonomous, pilot-free and smart means of transport.

Expected outputs of this priority are mostly focused on newly created/integrated mobility systems that will enable the improvement of the quality of transport services in terms of access, liability, frequency and safety and effective use of the present infrastructure, commercially attractive technologies or equipment developed, STS technologies ensuring monitoring and information of traffic participants as well as provision of services to them (including prevention of accidents and incidents) and ecological driving technologies and equipment intended for improvement of driving quality and driver training. The main outputs can be used in development of STS and related technologies as Lithuania does not have developed integrated transport information infrastructure, existing parts of such infrastructure are not in line with the modern transport information infrastructure in the EU, resolution of such issues as the rational use of natural resources, environmental pollution control, rational urbanization, effective management of emergency situations that pose a threat to the environment or human health.

Priority “Technologies/models for the international transport corridors’ management and integration of modes of transport” includes: collaboration instruments, models and processes (across transport corridors and in the global logistical network), interaction and integration of various modes of transport, integrated information technologies and systems, security of transportation and logistics operations. The output could be used in the process of effective integration into global transportation/logistics and secure supply chains, the strengthening of competitiveness of Lithuania (as a transit state) in the markets. At the same time, innovative technologies would allow Lithuania to create a strong basis for a more effective collaboration with the neighboring countries, in particular, the Eastern partners in order to improve transport links and border crossing procedures, ensure closer integration of the markets, and prepare joint plans for continuity of mobility.

Expected outputs are described as innovative models and processes (procedures, structures, instruments etc.) that increase the effectiveness of cooperation between partners in international transport corridors and global logistic networks; integration of fragmented information flows’ management systems, infrastructure networks and transportation and mobility services into a single multimodal transport system, with the development and use of innovative technologies, models and structures; also technologies and facilities to assist the optimization and increase in the efficiency of logistic chains, with the decrease in both runs and pollution of the environment; innovative technologies or processes (e. g. e-seals, GPS tracking systems) to ensure security of transportation and logistics processes.

International transport corridor management models – innovative models and processes (procedures, structures, instruments and so on.), Increasing the effectiveness of cooperation between the partners in international transport corridors and global logistics networks. It is important to: (1) The integration of fragmented information management systems, infrastructure networks and transport and mobility services into a single multi-modal transport system through the development and use of innovative technologies, models and structures; (2) to develop technologies and tools to assist the logistics chain optimization and efficiency increase, reducing the distance traveled, as well as pollution; (3) To develop innovative technologies or processes (eg., E. Seals, GPS tracking systems), ensuring transportation safety and logistics processes.

The results can be used as efficiently as possible in order to integrate into the global transportation – logistics and security of supply chains, increasing Lithuania (as a transit country) competitive power markets. At the same time, Lithuania implementing innovative technologies provides a solid basis for more effective cooperation with its neighbors, in particular - with the Eastern Partnership countries with a view to ensuring better transport links, wall-crossing procedures for closer integration of the markets and the development of joint mobility continuity plans.

Taking the national level, the results of those Process innovations can be used: (1) The setting up of the various types of terminals and platforms; (2) forming the co-operating intermodal terminal network; (3) the development of Klaipeda port – the road network – rail network – airports interoperability; (4) the optimization of logistics management processes, including the last mile component; (5) The creation of a national “one stop shop” approach, based on a single integrated information system.

The successful development of logistics activities must be targeted research, in particular: transport policy, logistics, inter-modal transport, the transport engineering, Environmental Engineering, Informatics Engineering, during the transport, logistics, economic, Management, modeling processes. All the above areas of development along with education institutions academic staff (researchers) – a safe, sustainable, efficient, useful, productive, cost effective and intelligent of competitive logistics systems.

It could reduce or solve the problems associated with Organizational or Process innovations characteristics and thus contribute to sustainable Organizational and Process innovation in the successful implementation of International logistics companies operating practice.

Conclusions

Organizational innovation means the implementation of a new organizational method in the undertaking's business practices, workplace organization or external relations. These innovations are bringing results from a shift in underlying organizational assumptions, are discontinuous from previous practice, and provide new pathways to creating public value.

Process innovation is tightly connected with organization decision to solve an existing problem or perform an existing business process in a radically different way that generates something highly beneficial to those who perform the process or (and) rely on it.

Much of the process innovations are met in international logistic companies are: BSC (The balanced scorecard), JIT (Just-In-Time), TQM (Total Quality Management), LEAN, Six Sigma, TOC (Theory of Constraints) and others.

Proposed Logistics applicable management system fits to most of Organizational and Process innovations definition and could cover these logistic organizational processes, such as Warehouse Management and e-program, Order collection and order sorting, Cross-dock process, Internet access and Yard management.

Organizational and mostly Process innovations can shift Smart transport systems, Information and communication technologies also Technologies/models for the management of international transport corridors and Integration of transport modes, Advanced electronic contents, Content development technologies and Information interoperability also Information and communications technology infrastructure, Cloud computing solutions and services.

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ORGANIZACINĖS IR PROCESŲ INOVACIJOS TARPTAUTINĖSE LOGISTIKOS ĮMONĖSE: AKTUALUMAS IR LAUKIAMA NAUDA

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Santrauka

Straipsnyje analizuojamas organizacinių ir procesų inovacijų tarptautinėse logistikos įmonėse aktualumas, išskiriami pagrindiniai teoriniai naudos aspektai, kurių galima tikėtis įdiegus organizacinių ir (ar) procesų inovacijų sprendinius. Straipsnyje analizuojama organizacinių ir procesų inovacijų samprata, pateikiamas sisteminis jų struktūrinimas, atkreipiamas dėmesys į sudėtingą šių inovacijų sampratos takoskyrą, vertinant šių inovacijų sprendinius tarptautinėse logistikos įmonėse, išskiriamos ir apibūdinamos logistikos technologijų inovacijų konkurso pagrindinės kategorijos. Darbe ne tik susistemintai apžvelgiami pagrindiniai logistikos

sektoriuje diegiami ir palaikomi logistikos organizacinių bei procesų inovacijų sprendiniai, bet ir siūlomas tikslinis logistikos taikomosios valdymo sistemos sprendimas, integruojantis pagrindinius organizacinio logistikos proceso elementus, bet ir apimantis nemažą dalį organizacinių inovacijų sprendinių. Atsižvelgiant į išgrynintus ir patvirtintus sumanios specializacijos prioritetus, skirtus transporto technologijų ir paslaugų sričiai, straipsnyje išskiriamos ir aptariamos aktualios dvi pagrindinės transporto, logistikos, informacinių ir komunikacijos technologijų tobulinimo kryptys, priskirtinos procesų inovacijų sprendiniams: Sumaniosios transporto sistemos ir IKT bei Tarptautinių transporto koridorių valdymo ir transporto rūšių integracijos technologijos / modeliai.

PAGRINDINIAI ŽODŽIAI: *organizacinės, procesų inovacijos, logistika, sumanioji specializacija.*

JEL KLASIFIKACIJA: L92, M16, O31, O32, R42